

What is claimed is:

1. A method for providing object change information from a first system to a second system for synchronizing the second system with the first system, the second system having an object cache for storing objects, the method comprising the steps of:
  - 5 changing an object in the first system;
  - determining object change information representing a change made to the object in the first system; and
- 10 distributing the object change information from the first system to the second system to cause the second system to merge the object change information into the object cache so as to synchronize the second system with the first system.
- 15 2. The method as claimed in claim 1 further comprising a step of establishing a communication link between the first system and the second system wherein the distributing step distributes the object change information from the first system to the second system through the communication link.
- 20 3. The method as claimed in claim 2 wherein the establishing step establishes the communication link based on a publish/subscribe protocol.
4. The method as claimed in claim 1 further comprising a step of registering the second system in the first system prior to the distributing step wherein the distributing step distributes the object change information to the registered second system.
- 25 5. The method as claimed in claim 1 further comprising a step of sending the object change information to a database for updating the object in the database with the object change information.
- 30 6. The method as claimed in claim 5 further comprising the steps of:

receiving an error message from the database when the updating of the object in the database fails; and

discarding the object change information prior to the distributing step in response to the error message.

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7. The method as claimed in claim 1 wherein the first system includes an object cache for storing one or more objects, and the method further comprises a step of merging the object change information into the object cache of the first system.

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8. The method as claimed in claim 1 wherein the determining step determines the object change information as a minimal set of information representing the change made to the object.

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9. The method as claimed in claim 1 wherein the determining step determines the object change information to include a primary key identifying the object.

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10. The method as claimed in claim 1 wherein the object includes an attribute for containing object data or a value of a relationship with one, or more, other object, and the determining step determines the object change information to include a change made in the attribute of the object.

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11. The method as claimed in claim 1 wherein the first system includes a cache for storing one or more objects, the method further comprising the steps of:

receiving object change information distributed from the second system and containing information of changes made to one or more objects in the second system; and

merging the object change information received from the second system into the objects in the cache of the first system to synchronize the first system with the second system.

12. A method for providing object change information from a first system to a second system for synchronizing the second system with the first system, the first system having a first object cache for storing one or more objects and the second system having a second object cache for storing one or more objects,
  - 5 the method comprising the steps of:
    - determining object change information representing a change made to an object in the first system; and
    - distributing the object change information from the first system to the second system to cause the second system to merge the object change
  - 10 information into the second object cache so as to synchronize the object in the second cache of the second system with the changed object in the first system.
13. The method as claimed in claim 12 further comprising a step of
  - 15 establishing a communication link between the first system and the second system wherein the distributing step distributes the object change information from the first system to the second system through the communication link.
14. The method as claimed in claim 12 further comprising a step of registering
  - 20 the second system in the first system prior to the distributing step wherein the distributing step distributes the object change information to the registered second system.
15. The method as claimed in claim 12 further comprising a step of sending
  - 25 the object change information from the first system to a database for updating the object in the database with the object change information.
16. The method as claimed in claim 15 further comprising the steps of:
  - receiving an error message from the database when the updating of
  - 30 the object in the database fails; and
  - discarding the object change information prior to the distributing step in response to the error message.

17. The method as claimed in claim 12 further comprising a step of merging the object change information into the first object cache of the first system so as to synchronize the object in the first object cache with the changed object  
5 in the first system.

18. The method as claimed in claim 12 wherein the determining step determines the object change information as a minimal set of information representing the change made to the object.

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19. The method as claimed in claim 12 wherein the determining step determines the object change information to include a primary key identifying the object and any changed attribute of the object.

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20. The method as claimed in claim 12 further comprising steps of:  
receiving object change information distributed from the second system and containing information of changes made to one or more objects in the second system; and

merging the object change information received from the second  
20 system into the objects in the first cache of the first system to synchronize the first system with the second system.

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21. A synchronization executor for providing object change information from a first system to a second system for synchronizing the second system with the first system, the first system being capable of changing the object, the second system having an object cache for storing objects, the system comprising;

a synchronization manager for obtaining object change information representing a change made to an object in the first system; and

30 a dispatcher for distributing the object change information from the first system to the second system to cause the second system to merge the object change information into the object cache so as to synchronize the object in the second system with the first system.

22. The executor as claimed in claim 21 wherein the synchronization manager establishes a communication link with the second system and the dispatcher distributes the object change information to the second system through the established communication link.
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23. The executor as claimed in claim 21 wherein the synchronization manager establishes the communication link based on a publish/subscribe protocol.
- 10 24. The executor as claimed in claim 21 further comprising a connector for obtaining the object change information that is distributed from the second system.
- 15 25. The executor as claimed in claim 21 wherein the synchronization manager obtains the object change information from the connector for updating the object in the first system.
- 20 26. The executor as claimed in claim 21 wherein the object change information is a minimal set of changes to the object.
27. The executor as claimed in claim 21 wherein the object change information includes a primary key to uniquely identify the object and a change in an attribute of the object.
- 25 28. A persistence system for synchronizing an object on a network, the network including a caching system having an object cache for storing objects, the persistence system comprising:
  - a transaction manager for changing an object and determining object change information representing the change made to the object for updating a database; and
  - 30 a synchronization executor for obtaining the object change information from the transaction manager and distributing the object change information

to the caching system to cause the caching system to merge the object change information into the object cache so as to synchronize the object in the object cache with the changed object in the persistence system.

5 29. The system as claimed in claim 28 further comprising a persistence system cache for storing one or more objects.

30. The system as claimed in claim 29 wherein the transaction manager merges the object change information into the persistence system cache.

10 31. The system as claimed in claim 28 wherein the synchronization executor establishes the network, and the dispatcher distributes the object change information via the established network.

15 32. Computer readable media storing instructions for use in the execution in a computer of a method for providing object change information from a first system to a second system for synchronizing the second system with the first system, the second system having an object cache for storing objects, the method comprising the steps of:

20 changing an object in the first system;  
determining object change information representing change made to the object in the first system; and  
distributing the object change information from the first system to the second system to cause the second system to merge the object change

25 information into the object cache so as to synchronize the second system with the first system.

33. Electric signals for execution in a computer of a method for providing object change information from a first system to a second system for synchronizing the second system with the first system, the second system having an object cache for storing objects, the method comprising the steps of:

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changing an object in the first system;

determining object change information representing change made to the object in the first system; and

distributing the object change information from the first system to the

5 second system to cause the second system to merge the object change information into the object cache so as to synchronize the second system with the first system.

34. A computer program product for execution in a computer of a method for

10 providing object change information from a first system to a second system for synchronizing the second system with the first system, the second system having an object cache for storing objects, the computer program product comprising:

15 a module for changing an object in the first system;

a module for determining object change information representing a change made to the object in the first system; and

a module for distributing the object change information from the first system to the second system to cause the second system to merge the object change information into the object cache so as to synchronize the second

20 system with the first system.